

What is claimed is:

1. A parallel operation system of transmission amplifiers, comprising:

first and second transmission amplifiers which receive
5 common input signals for outputting amplified signals from respective ones; and

a coupling unit which combines outputs of the first and second transmission amplifiers, to provide as its output;

the first and second transmission amplifiers each
10 including:

a main amplifier; and

a modulation unit disposed on the input side of the main amplifier; wherein

the output of one of the modulation units included in the
15 first and second transmission amplifiers is fed in common to the main amplifiers included in the first and second transmission amplifiers.

2. The parallel operation system of transmission amplifiers
20 according to claim 1, further comprising a switch interposed between the main amplifier and the modulation unit included in each of the first and second transmission amplifiers; the switch being changed over to feed, in common, the output of one of the modulation units included in the first and second transmission
25 amplifiers, to the main amplifiers included in the first and second transmission amplifiers.

3. A parallel operation system of transmission amplifiers, comprising:

first and second transmission amplifiers which receive common input signals for outputting amplified signals from

5 respective ones; and

a coupling unit which combines outputs of the first and second transmission amplifiers, to provide as its output;

the first and second transmission amplifiers each including:

10 a main amplifier;

a digital pre-distorter disposed on the input side of the main amplifier, for creating distortion anticipated values of the main amplifier to add them to the input signals;

a quadrature modulator which quadrature modulates the
15 output of the digital pre-distorter; and

an up-converter having a local oscillator, for converting the output frequencies of the quadrature modulator; wherein

the output of the up-converter included in one of the first and second transmission amplifiers is fed in common to the main
20 amplifiers included in the first and second transmission amplifiers.

4. The parallel operation system of transmission amplifiers according to claim 3, wherein

25 the first and second transmission amplifiers each have a down-converter, the output of the coupling unit being fed back via the down-converter to the digital pre-distorters included

in the above first and second transmission amplifiers.

5. The parallel operation system of transmission amplifiers according to claim 3, further comprising a switch interposed
5 between the main amplifier and the up-converter included in each of the first and second transmission amplifiers; the switch being changed over to feed, in common, the output of one of the up-converters included in the first and second transmission amplifiers, to the main amplifiers included in the first and
10 second transmission amplifiers.

6. The parallel operation system of transmission amplifiers according to claim 3, wherein
power is supplied to only one of the up-converters included
15 in the first and second transmission amplifiers, the output of the power supplied up-converter being fed in common to the main amplifiers included in the first and second transmission amplifiers.

20 7. The parallel operation system of transmission amplifiers according to claim 1, further comprising:

an external connector to provide a connection or disconnection between the first transmission amplifier, the second transmission amplifier, and the coupling unit that
25 combines the outputs of the first and second transmission amplifiers, for the output, to thereby effect a switching between the parallel running and the single running.

8. The parallel operation system of a transmission amplifier according to claim 4, further comprising:

an attenuator for adjusting the difference between
5 feedback signal levels to the digital pre-distorter in the parallel and single running.

9. The parallel operation system of a transmission amplifier, comprising, on the output side of the up-converter, an attenuator
10 for adjusting the difference between feedback signal levels to the digital pre-distorter in the parallel and single running.

10. A parallel operation system of transmission amplifiers, comprising:

15 first and second systems each having a digital pre-distorter which receives digital signals, having a D/A converter which converts the output of the digital pre-distorter into an analog signal, and having a main amplifier to amplify the outputs of the D/A converter;

20 a coupling unit which combines the outputs of the main amplifiers of the first and second systems; and

a feedback system including a D/A converter which converts the output of the coupling unit into a digital signal, wherein

the output of the D/A converter included in the feedback
25 system is fed back to the digital pre-distorters of the first and second systems, and wherein

the digital pre-distorters of the first and second systems

create distortion anticipated values of the main amplifiers as a function of the fed back output level of the coupling unit and add them to the inputted digital signals, for output.

- 5 11. A parallel operation system of transmission amplifiers, comprising:

first and second systems each having a pre-distorter which receives analog signals, having an up-converter which multiplies the output of the pre-distorter up to a predetermined frequency,
10 and having a main amplifier which amplifies the output of the up-converter;

a coupling unit which combines the outputs of the main amplifiers of the first and second systems; and

a feedback system including a down-converter which reduces
15 the output of the coupling unit into a predetermined frequency, wherein

a common reference signal is fed to both the up-converter and the down-converter, and wherein

the output of the down-converter included in the feedback
20 system is fed back to the pre-distorters of the first and second systems, and wherein

the pre-distorters of the first and second systems create distortion anticipated values of the main amplifiers as a function of the fed back output level of the coupling unit and
25 add them to the inputted analog signals, for output.